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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/032,949	12/26/2001	Naoki Mukaida	10416-18	7222

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EXAMINER

ROJAS, MIDYS

ART UNIT	PAPER NUMBER
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2189

DATE MAILED: 07/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/032,949

Applicant(s)

MUKAIDA ET AL.

Examiner

Midys Rojas

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 May 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed May 4th, 2005 have been fully considered but they are not persuasive.

Applicant argues that the reference relied upon does not enable a determination of whether data has been written in redundant areas of all pages or only a part thereof, in response to abnormal interruption. However, in the Estakhri reference the start data written in the redundant areas of all pages enables the determination of whether data has been written in redundant areas of all pages or only in a part thereof in-response to abnormal interruption ("when power to the system is turned off... when power is restored... Col. 6, lines 37-53). When abnormal termination occurs, table 144 must be recreated; in this process the start data of all pages (flags) stored in each sectors' redundant area (flag field 110) is analyzed.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Estakhri et al. (5,835,935) in view of Konishi et al. (5,579,502).

Regarding Claims 1-2, 10, 13-17, 19-20, Estakhri et al. discloses a memory controller 200 for accessing a memory 212 having a plurality of blocks (clusters) each constituted of a

plurality of pages (sectors) based on a host address supplied from a host computer (Figures 9 and 3, Column 6, lines 21-36 and Column 3, lines 34-47). Estakhri also discloses writing means for writing user data to the target page (“writes updated information into a next empty sector”, Col. 3, line 64- Col. 4, lines 15) and writing start page data (used flag, old flag, defect flag, system sector flag) to a redundant area (flag field 110 within sector 102, see Col. 3, lines 34-47). The system of Estakhri teaches the writing to start page data (used flag, old flag, defect flag, system sector flag) to the redundant areas (flag field 110) of all pages (“each sector...”) of a physical block in which data is writable by performing a series of data write operations. The start page data from the redundant areas of all pages is also recorded in the management table 144. The start data written in the redundant areas of all pages enables the determination of whether data has been written in redundant areas of all pages or only in a part thereof in-response to abnormal interruption (“when power to the system is turned off... when power is restored... Col. 6, lines 37-53). When abnormal termination occurs, table 144 must be recreated; in this process the start data of all pages (flags) stored in each sectors’ redundant area (flag field 110) is analyzed.

Estakhri does not disclose decision means for determining whether progressive data writing for writing user data to a target page is possible, wherein the decision means make the determination based on start page data. Konishi et al. discloses searching a management table (Figure 11 or 12) for a free block in a remedy memory to write data to (Column 14, line 66 – Column 15, line 7). In this system, the decision means is represented by the data processing controller 16 since this component determines if the free block is available for use (“writing is possible”) and if so, writes the data on to that free block. In the system of Konishi start page data is written in a management table (translation table) for each block of the remedy memory (Col

14, line 56 – Col 15, line 7 and Col 15, lines 51-63) and a “free block” flag can be represented by the value “0000”. It would have been obvious to one of ordinary skill in the art at the time the invention was made to add a “free block” flag to the table of Estakhri et al. and to integrate the free block table searching procedure of Konishi et al. in order to facilitate the finding of free sectors within the memory when computer updates are being applied to the memory clusters (Column 3, line 62 – Column 4, line 15). The resulting means for deciding if a write access is possible by determining if the target page is free and writing such access if such determination is affirmative, would be effective for any subsequent page requests (second, third, fourth target pages).

Regarding Claim 18, Estakhiri discloses the memory 100 (figure 1) wherein each block 116 has a user area (data) and a redundant area (flags 110) in which flag information is kept. In the redundant area, an old flag 118 is kept which marks data within a sector as having been replaced. Since the data has been replaced by data in another location, this data is not necessary and therefore, can be written over. This sector can be considered to be a free sector since new data can be written into it (Col. 3, lines 40-46).

Regarding Claim 3, Konishi discloses writing at least a part of new free page information (“writes start address YYYY of block X in the portion corresponding to block number Y”) resulting from writing user data to at least one page included in the block which includes the target page (Column 15, lines 8-15).

Regarding Claims 4-5, 11-12, Konishi discloses a management table containing information designating free pages within the memory, which in turn is the same as indication of whether any free pages exist. If the table does not designate any pages as free, then that indicates

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that no free pages exist. Additionally, in designating all free pages, the table would also mark as free any free pages following the first free page (Col 14, line 56 – Col 15, line 7 and Col 15, lines 51-63).

Regarding Claims 6-7, Estakhiri et al. discloses a memory controller 200 and table generating means for generating the table 144 based on the first information read from a top page of at least a part of the plurality of blocks (“restoring or reloading the table 144”, Column 6, lines 37-53).

Regarding Claims 8-9, Estakhiri et al. discloses obtaining the tag information contained in table 144 by reading items of start page information indicating those pages among the pages contained in corresponding blocks that are top pages of sets of one or more pages (“system sectors... holding flags”, Column 6, lines 37-53). In combining the invention of Estakhiri with the free block method of Konishi, it is understood that in reading the items of the start page, if all pages are free pages they would be clearly designated as such.

Conclusion


4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Midys Rojas whose telephone number is (571) 272-4207. The examiner can normally be reached on M-F 5:30am - 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mano Padmanabhan can be reached on (571) 272-4210. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

July 22, 2005


Midys Rojas
Examiner
Art Unit 2189

MR


7/25/05

MANO PADMANABHAN
SUPERVISORY PATENT EXAMINER